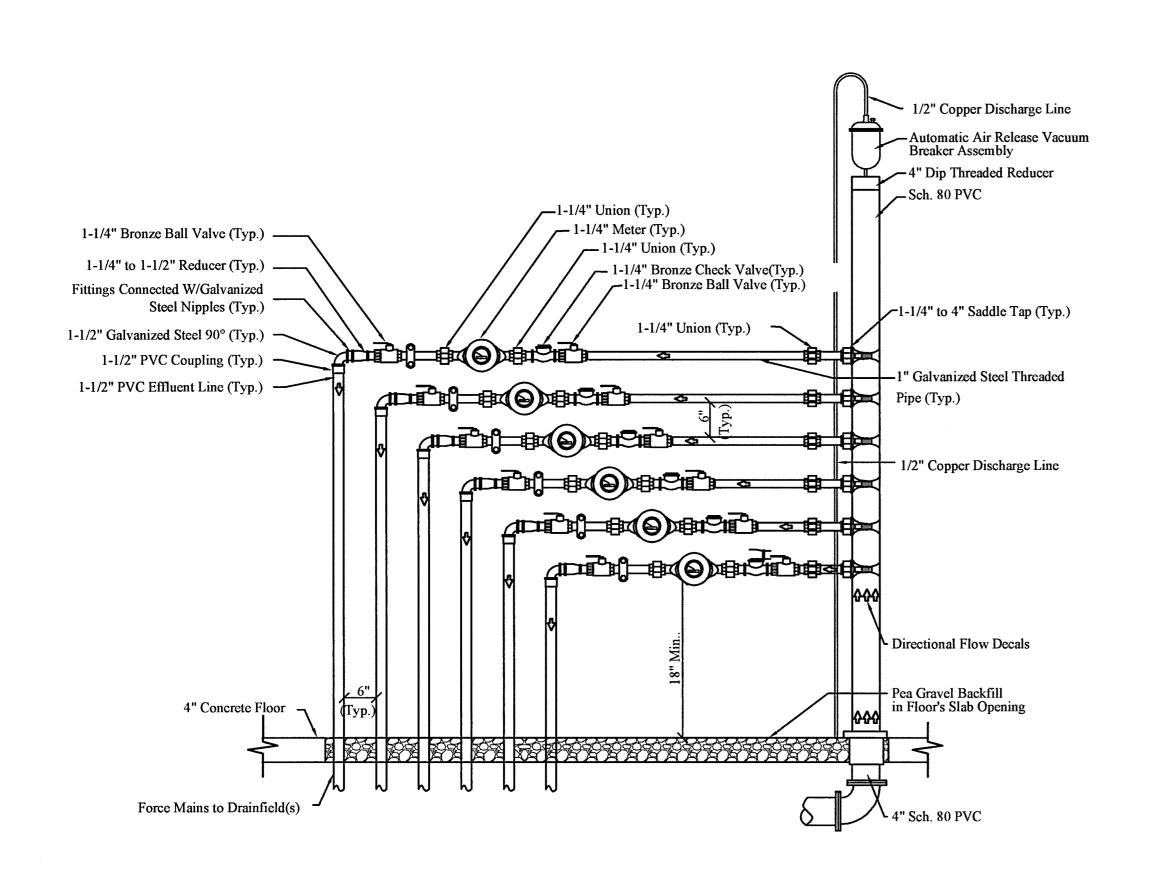


# Chemical Solution Tank Notes:

- 1. Provide chemical solution tanks
- 2. Chemical solution tank detail shown hereon is schematic only. Contractor shall provide shop drawings of specified tanks for review and approval by thenegineer.
- 3. Refer to Sheet C6.1 for proposed location of Soda Ash tanks.
- 4. Chemical mixing motors and feed pumps shall be installed per the WWTP Lab Building drawings and project specifications.
- 5. Provide timer control for metering and mixing of Soda Ash.

CHEMICAL SOLUTION TANK (TYP) NO SCALE



# EFFLUENT MANIFOLD & METER STATION PIPING SCHEMATIC

NO SCALE

1. Label Each Forcemain Per the Proposed Drainfield(s)

2. Post Control Meter Functional Specification at Meter Station.

# **GENERAL NOTES:**

- 1. In accordance with VSUBC, this building shall receive a 200 amp electrical service. Since the electrical service is less than 800 amp, this project does not require mechanical, electrical and plumbing drawings signed and sealed by a licensed engineer.
- 2. This building is being constructed as an accessory utility building for the sanitary sewer operations of the subdivision (a private entity). This structure shall provide the testing laboratory for the sewage treatment plant. This building is an independent structure. There shall be no other building structure with occupants within 20' of this
- 3. This building shall not have any fulltime occupants. Testing staff shall periodically visit the complex in order to monitor the operations of the sanitary sewer.
- 4. Since this building is a private structure, for private use only, it shall not be required to comply with the handicap accessibility requirements of CABO ANSI A117.1.
- 5. The sidewalks and the grades around the building shall be as shown on the site plan.
- 6. The building shall receive heating, air-conditioning and ventilation for all spaces in accordance with applicable
- 7. The cabinets and casework noted on the plans shall include 36" high counter with 24" deep base cabinets and 13" deep wall cabinets as shown on the plans. The wall cabinets shall be 30" tall. All wall cabinets shall be 24" wide with doors and adjustable shelves. All base cabinets shall be 24" wide. All cabinets and counters shall be constructed with 3/4" thick plywood or particleboard and they shall receive high-pressure plastic laminate on all exterior visible surfaces. All interior surfaces shall receive melamine. Comply with applicable requirements of AWI. Submit shop drawings for approval.
- 8. All other materials and finishes used on this project shall be standard commercial grade products and systems as approved for similar use.

# **BUILDING CODE ANALYSIS:**

- APPLICABLE CODES: IBC 2003, VIRGINIA UNIFORM STATE WIDE BUILDING CODE, CABO ANSI A117.1
- USE GROUP: U, UTILITY (IBC 312)
- CONSTRUCTION CLASS: TYPE VB, UNPROTECTED WOOD FRAMED (IBC 601)
- ALLOWABLE AREA: 5,500 S.F. (IBC 503)
- PROPOSED AREA: 720 S.F.
- ALLOWABLE HEIGHT: 1 STORY AND 40 FEET (IBC 503)
- ACTUAL BUILDING HEIGHT: 1 STORY AND 15 FEET (MEAN ROOF HEIGHT)
- PLUMBING FIXTURE ANALYSIS (INTERNATIONAL PLUMBING CODE, SECTION 403)

OCCUPANT LOAD:

- 1. STORAGE USE = 1 OCCUPANT 2. LABORATORY USE = 2 OCCUPANTS
- TOTAL FACILITY OCCUPANTS = 3 OCCUPANTS

WATER CLOSETS: REQUIRED = 1 PROVIDED = 1 SINKS: REOUIRED = 1 PROVIDED = 1 DRINKING FOUNTAIN: REQUIRED = 1 PROVIDED = SERVICE SINK: REQUIRED = 1 PROVIDED = 1

# Effluent Manifold Calibration Specification

- Contractor shall inspect all effluent disposal structures, equipment, and piping to ensure that the effluent disposal system is ready for normal operation. Calibration of the disposal system shall not be performed unless the effluent pump station, magnetic flowmeter(s), distribution manifold(s), forcemain piping, and mass drainfield(s) have been properly installed, cleaned, inspected, and determined suitable for normal
- Fill the effluent pump station completely full with clean water from a suitable water source. Water shall be procured by the contractor's expense. Sufficient quantities and or sources of clean water shall be available to conduct and complete the calibration testing. Untreated wastewater shall not be used for testing. Contractor shall take all necessary precautions to ensure that dirt, detritus, and any solid materials are not introduced into the effluent disposal system.
- Open all gate valves in the master valve vault and at the effluent distribution manifold. 4. Energize the effluent pump and allow pump to operate for five minutes or until flow rate at the magnetic meter has stabilized. Record the flow value on a flow distribution chart developed for the effluent disposal system. The effluent pump station for this project is rated at approximately 210 GPM, but final installation
- 5. Begin calibration of the effluent forcemains by adjusting the valves located on the effluent distribution manifold to achieve the following flow rate values for this project:

Mass Drainfield Area #1 22,500 GPD = 15.62 GPM (12.97%)

conditions may result in a slightly different flow rate.

(Conveyed by 3 1-1/2" Effluent Lines, Conveying 5.20 GPM Each) Mass Drainfield Area #3 30,780 GPD = 21.37 GPM (17.75%)

(Conveyed by 3 1-1/2" Effluent Lines, Conveying 7.12 GPM Each)

Mass Drainfield Area #4A 73,160 GPD = 51.50 GPM (42.77%) (Conveyed by 4 1-1/2" Effluent Lines, Conveying 12.88 GPM Each)

Mass Drainfield Area #4C 45,990GPD = 31.93 GPM (26.52%)

(Conveyed by 4 1-1/2" Effluent Lines, Conveying 7.98 GPM Each)

- Adjustments will require the use of a stopwatch timer and an indicating style flow meter as specified in the construction drawings. Calibration will typically require a series of adjustments to the valves in order to achieve the aforementioned initial proportional flow rates.
- 6. The contractor or owner shall repeat this procedure six months after the effluent disposal system has been in operation. Calibration at this time period must take into account the magnetic flow meter totalized flow values as well as the individual effluent forcemain total flow values such that a determination of individual drainfield loading values can be made. The contractor shall submit this information to the engineer for review and confirmation prior to making additional flow value adjustments. This procedure shall be
- repeated twelve months after system start-up. Contractor shall post a sign adjacent to the effluent distribution manifold indicating that valves have been adjusted and shall not be adjusted further without notification from the owner or the owner's consulting
- 8. The aforementioned calibration specification shall be printed on a laminated 11x17 foam core board and mounted to the wall adjacent to effluent distribution manifold.

LABORATORY BUILDING AND EFFLUENT STORAGE TANK STRUCTURAL NOTES:

# **DIVISION 1 - GENERAL**

- 1.1 The contractor shall be responsible for design and erection of all temporary bracing, form work, sheeting, shoring and underpinning necessary to perform the work.
- 1.2 The contractor shall be responsible for all construction means, methods, techniques, sequences, and procedures and for safety precautions and programs as they relate to the work on this project.
- 1.3 All construction material, workmanship and design shall conform to the 2003 International Building Code and other
- 1.4 The contractor shall not scale drawings. If the general contractor finds a conflict with the plans, then the general contractor shall contact the engineer immediately.
- 1.5 The contractor shall refer to drawings of other trades and vendor drawings for embedded items and recesses not shown
- on the drawings.

### **DIVISION 2 - FOUNDATION AND SITE PREPARATION**

local codes prevailing during time of construction.

- 2.1 The surface of exposed subgrade shall be inspected by probing or testing to check for pockets of soft or unsuitable material. Excavate as required to remove unstable soil.
- 2.2 Proper site drainage shall be maintained in order to protect the site from excess surface moisture during construction. Protection of the site shall include the construction of temporary ditches, berms or other surface water diversion devices in order to divert surface water from and not across the site.
- 2.3 Strip all topsoil from areas to be covered by structures or pavement. Fill for buildings or pavement shall be controlled fill. Controlled fill shall be Type SM or better, placed in 8" loose lifts and compacted to 95% or better of maximum dry density as determined by standard proctor (ASTM D 698).
- 2.4 Base slab shall be founded on soil having a minimum bearing capacity of 2500 psf. ACS Design recommends the owner employ a geotechnical testing company to perform a subsurface investigation of the proposed site and prepare a written report stating allowable bearing pressures, settlement expected, foundation recommendations, subgrade preparation and any other pertinent information. A copy of this report should be submitted to ACS to verify foundation

### **DIVISION 3 - CONCRETE**

- 3.1 All reinforcing steel shall be billet steel ASTM A615, Grade 60. Ties stirrups shall be Grade 60.
- 3.2 Unless otherwise noted, provide 3/4" chamfer on all concrete corners exposed to view.
- 3.3 Concrete protection for reinforcing steel and other general requirements for fabrication and placing of reinforcing steel shall be in accordance with the latest edition of the "American Concrete Institute Building Code" (ACI 318) unless otherwise noted.
- 3.4 All concrete shall be 4000 psi. All materials and processes to this end shall conform to ACI Recommended Practice for the Design of Concrete Mixes, (ACI-613, latest revision).
- 3.5 Contractor shall place 1/2" expandable filler in joints of concrete slab on grade against vertical surfaces and dissimilar
- 3.6 All reinforcing marked as continuous (cont.) on the plans and details shall be lapped 36 bar diameters at splices unless otherwise noted.

### **DIVISION 6 - WOOD**

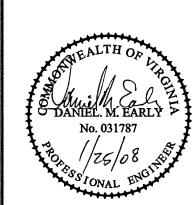
- 6.1 Wood construction shall conform to the requirements of the American Institute of Timber Construction and the National Forest Products Association (National Design Specification for Wood Construction).
- 6.2 Wood trusses shall be designed by the manufacturer to support the live and dead loads shown on these drawings. Design shall comply with the National Forest Product Association.
- a. Material shall be No. 2 grade southern pine, douglas fir, larch, kiln dried dressed and used at 19 % maximum moisture content or as required to satisfy stress requirements
- b. Wood truss joints shall be designed and fabricated in accordance with the latest Truss Plate Institute publication. Each unit shall bear the trademark of the fabricator. Trusses shall have panel type connections with steel tooth plates assembled
- c. Roof truss design criteria

Bottom chord - dead load = 10 psf

Top chord - live load = live and snow Top chord - dead load = calc. From dwgs Bottom chord - live load = 0 psf (20 psf where 42" between top and bottom chords)

d. Hurricane clips and anchors shall be Simpson/Strong-Tie.

- 6.3 Wood treatment: pressure treat all sills and plates and any other wood in contact with masonry, concrete or ground, and as shown elsewhere on drawings. Pressure treatment shall comply with AWPB Standards c2 and lp-22.
- 6.4 All headers in load-bearing walls shall be (2) 2x10 with two layers of 1/2" plywood unless otherwise noted.
- 6.5 Unless otherwise noted, all nailing shall conform to the "Fastening Schedule" table 2304.9.1 of 2003 International
- 6.6 Exterior walls shall be nominal 2" x 4" @ 16" OC, unless otherwise noted. Interior walls shall be nominal 2" x 4" @ 16" OC, unless otherwise noted.
- 6.7 All structural lumber shall be a minimum No. 2 grade spruce/pine/fir (spf) and used at 19 % maximum moisture content or equal. 6.8 Exterior stud walls shall be continuously bridged at mid-height with wood blocking. Provide continuous double 2 x top
- plate, typical in all walls. 6.9 Sheathing shall conform to APA specifications. End joints shall occur over supports or provide aluminum panel clips
- between sheets. Panels shall be staggered on half panel length from adjacent panels. Provide 1/8 inch space at panel ends. 6.10 Roof sheathing shall be 1/2 inch "APA rated sheathing", 48/24 panel span rating, exposure 1. All panels shall be nailed with 8d common nails at 6 inches on center at all ends and edges and at 12 inches on center at all intermediate
- 6.11 Exterior wall sheathing shall be 1/2 inch "apa rated sheathing", 24/16 panel span rating, exposure 1. All panels shall be nailed with 6d common nails at 6 inches on center unless otherwise noted at all ends and edges and at 12 inches on center at all intermediate supports. Include sill plate insulation, caulking of sills and plates.



# ENGINEERING - SURVEYIN

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# DESIGNED BY: DME CHECKED BY 15 JUNE 2007 JOB NUMBER:

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	PER ACS DESIGN	
	No. 2	- " ' '
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WWTP LABORATORY **NOTES & DETAILS**